Abstract of the Disclosure

EFFICIENTLY REGENERATED PARTICLE TRAP FOR AN INTERNAL COMBUSTION ENGINE AND METHOD OF OPERATING SAME

Particle traps are often used to reduce particulate emissions from internal combustion engines to acceptable levels. In order to maintain the particulate traps, they must be periodically regenerated in order to burn off the trapped particles. Strategies for efficiently regenerating the particle traps have been elusive. The present invention separates the exhaust flow into several flow paths. During regeneration, the flow paths are sequentially partially closed, and the particle traps in each of the flow paths are individually regenerated using electrically conductive filter elements. The present invention can be used to effectively filter particles from any combustion process, especially exhaust from internal combustion engines. The particle trap assembly achieves a relatively low pressure loss and efficient regeneration by supplying an oxidizer via a small cross-flow passage.